

**Patent claims,** as amended may 25, 2005

1. Gel-like mass for the treatment of ambient air, containing a matrix from cross-linked polymers bearing hydrophilic groups, namely
  - X) reaction products of a polymer bearing hydrophilic groups and having a molecular weight of more than 400, selected from maleinized or epoxidized polymers or carbohydrates, with a cross-linking agent, selected from polyamines with 2 or 3 amino groups, urea, polyethylene imine, epichlorhydrin, triethyleneglycol, pyromellithic acid anhydride, zinc oxide, zinc acetate or calcium hydroxide,
  - or
  - Y) copolymers of a monofunctional (meth-)acrylate monomer having a molecular weight of 50 to 1000 and a polyfunctional (meth-)acrylate monomer as cross-linking agent,to which 10 to 90 %, with reference to the mass, of volatile active agents are adsorbed, which together with the matrix form a sponge-like structure, from which the active agents can be released to the ambient air and volatilize, characterized in that the polymer matrix contains at least two different polymers A, B, .....
2. Gel-like mass according to claim 1, characterized in that the polymers A, B,..... after cross-linking form an interpenetrating network in the polymer matrix.
3. Gel-like mass according to claim 1, characterized in that the polymers A, B,..... after cross-linking form a partly interpenetrating network in the polymer matrix.

4. Gel-like mass according to claim 1, characterized in that the polymers A, B,.... after cross-linking are present in the polymer matrix as discrete layers lying side by side.
5. Gel-like mass according to claim 1, characterized in that the polymer matrix consists of two different polymers A and B, of which one is more and the other is less water-compatible.
6. Gel-like mass according to claim 1, characterized in that the polymer matrix contains at least 10 % by weight of each of the polymers A, B, .....
7. Gel-like mass according to claim 1, characterized in that the cross-linking agent is a polyamine.
8. Gel-like mass according to claim 1, characterized in that the polymer of polymer class X is a maleinized or epoxidized polydiolefine, preferably polybutadiene or polydecadiene.
9. Gel-like mass according to claim 8, characterized in that the maleinized polymer is a reaction product of a liquid polybutadiene and maleic acid anhydride.
10. Gel-like mass according to claim 7, characterized in that the polyamine is polyoxypropylene diamine or polyoxypropylene triamine.
11. Gel-like mass according to claim 1, characterized in that the cross-linked polymers X contains hydrophilic  $-\text{CHR}-\text{O}-$  and/or  $-\text{NR}-\text{CO}-$  groups.
12. Gel-like mass according to claim 13, characterized in that the monofunctional monomer contains hydrophilic  $\text{HO}-$ ,  $-\text{CH}_2-\text{CH}_2-\text{O}-$ ,  $\text{H}_2\text{N}-$  or  $\text{CONH}-$  groups.

13. Gel-like mass according to claim 1; characterized in that the active agents are aldehydes, ketones, alcohols, esters, terpenes or natural oily essences.
14. Gel-like mass according to claim 1, characterized in that the active agents are herbicides, insecticides, insect-repellents, fungicides, nematocides or akaricides.
15. Gel-like mass according to claim 1, characterized in that the active agents are biocides, like phenolic compounds, halogen compounds or quaternary ammonium compounds.
16. Gel-like mass according to claim 1, characterized that the polymer matrix contains 0.01 to 90 % by weight of water.
17. Gel-like mass according to claim 1, characterized in that the polymer matrix contains flame retardant agents, like bromine compounds, sugar, azodicarbonamide; solvents, like alcohols; means for preventing caking, like saw dust; and sublimation assistants which accelerate the release of the active agents.
18. Gel-like mass according to claim 1, characterized by a surface tension of between 5 and 80 dynes/cm.
19. Gel-like mass according to claim 1, characterized in that the polymer matrix contains microscopic voids having a pore size of 0.1 to 100  $\mu\text{m}$ , in which the active agents are adsorbed.

20. Gel-like mass according to claim 1, characterized in that it is applied to a carrier material or encased in a carrier material, so that it forms together with the carrier material a flat sheet.
21. Gel-like mass according to claim 20, characterized in that the carrier material is a fiber fleece or a fiber fabric which may be coated with a plastic material.
22. Gel-like mass according to claim 21, characterized in that the fibers are cellulose, cotton, linen, a polyamide or a polyester.
23. Gel-like mass according to claim 20, characterized that the flat sheet is 0.01 to 5 mm thick.
24. Gel-like mass which is applied to a carrier material according to claim 20 and has the form of a sheet, characterized in that the sheet is rolled together, the individual layers having a distance of 1 to 100 mm from each other.
25. Gel-like mass according to claim 1, characterized in that it is in the form of crumbs, shavings, granules or spheres.
26. Gel-like mass according to claim 1, characterized in that it is in the form of strips or boards having a thickness of 2 to 50 mm and being laid upon nets or lattices.
27. Gel-like mass according to claim 1, characterized in that the active agents are released slowly and steadily for a period of at least three days.
28. The use of the gel-like mass according to claim 1 for removing or masking malodorous substances in the air, characterized in that the adsorbed active

agents according to claim 13 are slowly and steadily released and volatilize, and then react with the malodorous substances or mask them.

29. The use as claimed in claim 28 for deodorizing animal breeding facilities, stables and liquid manure containers, especially pig breeding facilities.
30. The use as claimed in claim 28 for deodorizing rooms in buildings, especially in hotels and restaurants.
31. The use as claimed in claim 28 for deodorizing public means of transport.
32. The use as claimed in claim 28 for deodorizing large-scale plants in which malodorous solid or liquid substances are stored open-air.
33. The use of the gel-like mass according to claim 1 as pesticides, characterized in that the adsorbed active agents according to claim 14 are slowly and steadily released and display their efficiency against pests and harmful substances.
34. The use of the gel-like mass according to claim 1 for the extermination of harmful microorganisms, characterized in that the adsorbed active agents according to claim 15 are slowly and steadily released and react with the microorganisms and exterminate them.
35. Gel-like mass according to claim 1 in the form of a thin sheet, characterized in that the surface of the gel-like mass is coated with 0.01 to 1 g per cm<sup>2</sup> of ultrafine particles of an oxide, a sulfide or a selenide of zinc or cadmium.